

soundscape mixpander

**DSP-Powered PCI Audio Card
for PC based Audio Workstations**

Installation & QuickStart Guide

Version 4.3
English Version



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Welcome to the SSL Soundscape Mixpander

Congratulations for your purchase of an SSL Soundscape Mixpander PCI audio card.

This user guide describes the use of the SSL Soundscape Mixpander DSP-powered audio card in conjunction with the XLogic Alpha-Link Converter series. For more information on using the SSL Soundscape Mixpander as a DSP expansion card with the Soundscape 32 DAW, please refer directly to the Soundscape Editor manual.

Please be assured that the SSL Soundscape Mixpander will provide you with many years of reliable service and a level of audio quality normally associated with systems costing several times its price, while its expandability, the ergonomics of the software and the worldwide customer support from Solid State Logic are unmatched at any price.

IMPORTANT: Please register your SSL Soundscape Mixpander audio card on our website. This will ensure that you receive notifications of future software upgrades and other important information, and that your guarantee is registered. Registration will also make you eligible for technical support. The Solid State Logic home page is at: <http://www.solid-state-logic.com/>

Solid State Logic is committed to the development and marketing of top-class solutions for native PC-based digital audio recording systems.

The SSL Soundscape Mixpander PCI card, used in combination with our Alpha-Link audio converter products, delivers the most powerful input/output, DSP-powered mixing, effects and processing solution for PC-based audio recording and editing systems.

The included SSL Soundscape Mixer software, a high-end application based on the mixer section of the SSL Soundscape Editor DAW software, offers unparalleled flexibility and ease of use. Its functionality goes far beyond that of a basic routing system between the external inputs and outputs and your native audio applications, offering a totally configurable mixer architecture and support for Soundscape format DSP-powered plug-ins from Solid State Logic and third party developers including Cedar Audio, Dolby Laboratories Inc., Wave Mechanics, TC Electronic, Sonic Timeworks, Aphex Systems, Arboretum Systems, Spinaudio, Drawmer, Acuma Labs and Algorithmix. VST plug-ins running on the host PC's CPU can also be inserted directly in the Soundscape Mixer. Naturally, simple preset mixer configurations can be loaded for basic routing tasks if you wish to work from a single, native application.

The SSL Soundscape Mixpander PCI card and associated software run under Microsoft® Windows® 2000 and Windows® XP.

1. Introduction

How to use the manuals

The SSL Soundstage product range has been designed from the ground up to be easy to use. If you are familiar with the Windows environment, installing PCI cards and the basics of recording and playing back digital audio, you could probably just set the system up and feel comfortable running a session within an hour. However, the SSL Soundstage Mixer offers a wealth of powerful and helpful features that you will only discover quickly by reading the SSL Soundstage Mixer Reference Guide, as well as this Installation and QuickStart Guide. It is therefore advisable, at some point, to read them both from cover to cover. For example, the Mixer is fully configurable, and while a few ready-made Mixers are provided, it is absolutely necessary to read the “Mixer” chapter of the Reference Guide early on to take full benefit from its capabilities. If you are new to digital audio recording, reading the manuals first is highly recommended. Please make sure you understand the Master Clock and Sample Rate concepts and that you understand the Mixer software’s routing possibilities. It is also a good idea to have the system switched on while you read the manuals, so that you can experiment with the features you read about. We trust that you will soon feel confident creating and using your own mixer configurations. However, even when it has become second nature, the comprehensive Table of Contents and Index (located respectively at the beginning and end of each manual) will provide convenient ways to check specific information whenever you need it.

Reading conventions

Key commands and key combinations

Some functions of the SSL Soundstage Mixer can be accessed through the use of computer keyboard keys or key combinations, as well as by using a mouse or other input device. In this manual computer keys will be shown between square brackets. For example, the key for the letter “E” will be written: [E]. Key combinations will be written using “+” signs. For example, pressing the “D” key while holding the “Control” key will be written as [Ctrl]+[D].

Menus

Where appropriate, to indicate a “path” under one of the main menus, the following format will be used: menu: Header|Submenu 1|Submenu 2|Submenu3|Item.

Screenshots

The appearance of the SSL Soundstage Mixer software on your computer screen may be different from the screenshots in this manual. This could be because your SSL Soundstage hardware

configuration is different, because you are using a different version of Windows, because you are using different Windows settings, or because the look of the SSL Soundscape Mixer can vary (e.g., the Toolbar can be moved around the main window). The screenshots themselves were not always made using the SSL Soundscape Mixer's default settings.

Disclaimer

These manuals have been written with great care and attention to detail, and we have attempted to cover every operational aspect of the SSL Soundscape Mixer. However, they are not contractual documents. Solid State Logic and/or the writer(s) of this manual cannot be held responsible for any loss or damage arising directly or indirectly from any error or omission in these manuals.

Trademarks

All trademarks are the property of their respective owners and are hereby acknowledged.

Website

The URL for the Solid State Logic website is: <http://www.solid-state-logic.com/>

SSL Soundscape Mixpander

The SSL Soundscape Mixpander, the absolute reference in multi-DSP effects and processing cards, used to be the exclusive privilege of Soundscape digital audio workstation users. Connected to the expansion port of a Soundscape 32 or compatible digital audio workstation via a proprietary bus, the SSL Soundscape Mixpander lends its awesome power to the Soundscape system to accomplish the most formidable mixing and processing tasks without breaking a sweat and allows multi-channel audio streaming between the Soundscape DAW and the host PC.

Today, with the SSL Soundscape Mixpander and XLogic Alpha-Link, users of native PC-based systems can enjoy many of the same benefits as Soundscape DAW users when recording or mixing.

The SSL Workstation I/O solutions combine three main elements to provide, quite simply, the ultimate digital audio solution for native PC-based systems:

- An SSL Soundscape Mixpander/9 (or Mixpander/5) multi-DSP card for mixing, effects and processing.
- An SSL XLogic Alpha- Link audio converter.
- The associated SSL Soundscape Mixer software, based on the mixer section of the Soundscape Editor DAW software.

Software drivers

The SSL Soundscape Mixpander comes with Low-latency MME drivers, WDM drivers, ASIO-2 drivers, DWave drivers and GSIF drivers for Windows 2000 and XP. It can be used with any PC based MIDI+Audio sequencer, recording and editing software or other audio applications.

All SSL Soundscape native systems are truly multiclient. This means that you can share your SSL Soundscape audio hardware between several different applications. You could for instance run Steinberg's Cubase or Nuendo, Sony's ACID and Tascam's Gigastudio simultaneously, with each application using a predefined number of the available audio channels. You could also record the output of Gigastudio into the audio software via the SSL Soundscape Mixer, along with external sources... adding real-time DSP-powered effects and processing as you go along.

Digital mixing, effects and processing

The SSL Soundscape Mixer software runs on the on-board DSP-powered mixing engine of the SSL Soundscape Mixpander. The Mixer's architecture is the same as used for the high end Soundscape Digital Audio Workstations, but adapted for the native environment: the "Track" inserts, which can be placed anywhere in the Mixer, are available as audio inputs and outputs to Windows audio applications such as MIDI+Audio sequencers or software samplers.

The included Soundscape Audio Toolbox provides some essential building blocks for commercial standard mixes, with multi-function dynamics processors (gate, expansion, compression and limiting), delay and delay based effects (chorus, flanger) and dither. Optional effects and processing plug-ins are available from Solid State Logic and other world renowned developers including Wave Mechanics, TC Electronic, Dolby Laboratories Inc., Cedar Audio, Sonic Timeworks, Aphex Systems, Arboretum Systems, Spinaudio, Drawmer, and Acuma Labs.

DSP-based processing

PC-based mixers suffer from a certain amount of processing delay, also known as "latency". This may be very small on an expertly configured, modern PC, but gets worse as native effects and processors are added in the signal path, so much so that it can be impossible to play an instrument and monitor the output in real-time through a software mixer with a few plug-ins. This is why most native MIDI+Audio sequencers now include a "plug-in delay compensation" feature. This solves the problem in mixing situations, but is by its very nature unusable while recording.

In contrast, the SSL Soundscape Mixer and Soundscape format DSP-powered plug-ins offer a level of performance on a par with high-end audio hardware in terms of sound quality and comparable to a hardware mixing console in terms of latency (...or absence thereof!). This is a major advantage when recording live vocals or instruments. DSP effect plug-ins can be inserted at any point in the signal path and the wet signal can be monitored in real-time (i.e. without any annoying processing delay) while recording the dry or wet signal, or both, into your chosen application.

When using a native MIDI+Audio sequencer in parallel with the SSL Soundscape Mixer, you can use VST and/or DirectX (depending on your choice of sequencer) and DSP-powered effects at the same time. In situations where the computer runs out of power, when the audio quality suffers or the MIDI timing becomes so poor that you cannot work with it, the SSL Soundscape hardware can take some of the work off the computer, allowing it to perform at its best and giving you the extra power needed to complete your work.

Native effects and processing plug-ins

While Soundscape format DSP-powered effects and processing plug-ins provide a unique combination of superior sonic quality, negligible latency and rock-solid reliability, we recognize that native processing has a part to play. The SSL Soundscape Mixer supports the VST format. This means that VST effect plug-ins running on the host CPU can be inserted directly in the SSL Soundscape Mixer. This is extremely useful in situations where latency is not an issue (e.g., during mastering) and allows access to a multitude of plug-ins.

Studio friendly!

The SSL Soundscape hardware is friendly to the rest of your studio too. You can hook up your external effects units to the SSL Soundscape Mixer using any number of pre/post sends and insert additional mixer strips to mix the return signal. Every element in the Mixer is in fact a plug-in that you can place exactly where required, which means that you can record to disk through the EQs, compressors or other effects.

If you already have a mixing console or you use the native EQs from your sequencer or audio software, then use the power of the SSL Soundscape hardware for the cool DSP effects rather than straightforward EQs and compressors. It's all up to you, and it means that you do not end up paying for processing power that you do not need, as is the case with some PCI cards that offer an inflexible mixer, with no possibility of running plug-in DSP effects from third party developers. All settings and the entire mixer configuration can be saved and loaded from a PC file, so you never need to lose that perfect mix you were working on yesterday!

Master Clock synchronization options

The clock reference for the SSL Mixpander is provided by the Alpha-Link AX, Alpha-Link MADI-AX or Alpha-Link MADI-SX. These units have an on-board Master Clock generator and WordClock input and output connectors. They can be set to operate as Clock Master, or synchronize to external WordClock or to ADAT/AES Clock.

2. Technical Specifications

SSL Soundscape Mixpander

SSL Soundscape Mixpander/9

- Motorola 56301 80MHz DSP for Bus Master PCI interfacing and up to 36 channel full duplex 24-bit audio streaming via 36 buses. The Multi-client SLL (Super Low Latency) drivers are fully Bus Mastering for minimal load on the host PC.
- 8 x Motorola 56362 100MHz DSP, 6 with 384kB and 2 with 1.5MB of fast SRAM. The total processing capability is up to 2.6 GIPS (Giga Instructions per Second).

SSL Soundscape Mixpander/5

- Motorola 56301 80MHz DSP for Bus Master PCI interfacing and up to 36 channel full duplex 24-bit audio streaming via 36 buses. The Multi-client SLL (Super Low Latency) drivers are fully Bus Mastering for minimal load on the host PC.
- 4 x Motorola 56362 100MHz DSP, 3 with 384kB and 1 with 1.5MB of fast SRAM. The total processing capability is up to 1.4 GIPS (Giga Instructions per Second).

SSL Soundscape Mixpander/9 and Mixpander/5

- On board configurable 36 bus digital mixer with full 5.1 surround processing, real-time plug-in capability and 64 inputs and outputs to and from other host PC applications via the PCI bus and drivers.
- Expansion Bus connector on the rear bracket for connection to Alpha-Link AX, Alpha-Link MADI-AX or Alpha-Link MADI-SX. The bi-directional bus includes WordClock and SuperClock.
- Sample Rates: 10kHz to 96kHz, supplied via Expansion Bus.

Soundscape format DSP-powered plug-ins

Many high quality software plug-ins are available for the SSL Soundscape Mixer platform, both from specialist third party companies and from Solid State Logic. Visit our website for further details on available optional plug-ins for the SSL Soundscape Mixpander.

3. Installation

In order to run the SSL Soundscape Mixer software you need:

- The drivers, SSL Soundscape Mixer software, and any plug-ins you own a password for. Please always use the latest software, downloadable from our website.
- One or more SSL Soundscape Mixpander cards.

Minimum system requirements

The minimum specifications for running the SSL Soundscape Mixer software are as follows:

- A PC running Windows 2000 or Windows XP.
- One free full length PCI expansion slot (one per card if you plan to use multiple cards).
- One free IRQ, or one IRQ that can be shared (one per card if you plan to use multiple cards).
- Mouse, track ball, or tablet and pen.
- SVGA color monitor 800x600 resolution and 16bit graphics.

***NOTE:** The SSL Soundscape Mixer software requires a correct installation of Windows on the host PC. Try some of the sample programs that come with Windows. If you experience any problems, try to sort these out through Microsoft Technical Support before installing the SSL Soundscape Device Driver and SSL Soundscape Mixer. It is much easier to deal with one problem at a time and it will be more difficult for us to help you if you do not have a reliable Windows installation. Also, if you are new to Windows and the PC environment, it would be useful to spend some time trying out the Windows applications supplied, because in order to use the SSL Soundscape Mixer you will need to be familiar with normal Windows tasks such as using the menus, selecting files and directories, using the mouse, etc.*

PC Configuration

In most cases there is no need for any special tweak to your PC configuration for Soundscape PCI audio cards to operate effectively. However, if you encounter problems, please consider the information in this section.

The Soundscape PCI audio cards use Motorola Farmchips for their PCI to DSP interface. They rely on a fully compliant PCI implementation with little or no tolerance for abnormal PCI implementations.

This makes the Soundscape platform more efficient than others, since the "native" PCI Burst Speed can be used for an Interrupt (PCI Latency Timer set to 64), whereas other cards may use different values like for instance 255, making them more tolerant but also making it difficult for other devices to get CPU attention.

Generally speaking, if you are specifying a PC for Soundscape, we recommend NForce chipsets for AMD processors and Intel chipsets for Intel processors. VIA and SIS chipsets are best avoided, whatever your choice of processor.

Recommended BIOS settings

Parameter	Recommended setting
PCI Latency Timer *	64
Spread Spectrum Clock	Disable
System Speed and Overclocking (Turbo Mode)	Disable or Standard
Onboard Audio/Gameport/MIDI	Disable
Unused onboard devices (e.g. Serial Port/Com, LPT Printer, FW, USB)	Disable

Parameter	Recommended setting
PCI Latency Timer *	64
Spread Spectrum Clock	Disable
System Speed and Overclocking (Turbo Mode)	Disable or Standard
Onboard Audio/Gameport/MIDI	Disable
Unused onboard devices (e.g. Serial Port/Com, LPT Printer, FW, USB)	Disable

* If your BIOS does not allow you to set the PCI Latency value, you may use the "PCI Latency Tool" available from <http://downloads.guru3d.com/download.php?det=951>

IRQ assignment

Soundscape PCI audio cards require an IRQ number to operate (this is not the case for the PCI Host Interface card). They may share an IRQ with another device, provided that the other device is also fully capable of sharing an IRQ. Multiple Soundscape PCI audio cards may share the same IRQ.

On systems that use hyperthreading there is no way to assign physical IRQs to chosen PCI slots. In ACPI mode (which is a must when using hyperthreading or dual CPU systems), the BIOS and Windows manage all PCI devices through the PCI Interrupt Handler on IRQ 9, and only allow IRQs higher than 15 for PCI devices, regardless of settings made in the BIOS.

Common symptoms of unsuccessful IRQ sharing may include any of the following:

- Low latency values are not possible without clicks in the audio.
- Communication error messages from the Soundscape driver/application.
- PC crashes or freezes.
- CPU Load Spikes
- Bad system performance with e.g. slow graphics or slow response, even with a low system load.

Hardware and software installation overview

For an easy installation please follow these steps in the order indicated:

1. Make sure you have the SSL Soundscape Mixpander Installation CD ready. Windows will require the CD to find the Soundscape Device Driver files during installation. The SSL Soundscape Mixer software, plug-in installers and plug-in demo are also included on the CD. The most up to date versions of all these files can always be downloaded from our website, but using the CD is the easiest way to proceed for a first installation.
2. Shut down the computer and physically install the Mixpander. Connect the Alpha-Link unit to the Mixpander via the Expansion ports.
3. Start the computer and install the driver when prompted.
4. Install the SSL Soundscape Mixer software and any Soundscape format DSP-powered plug-ins you own a password for and shut down the computer. (Plug-ins can also be installed at any time later). You can also install plug-in demos at this point.
5. Switch on the XLogic Alpha-Link unit and restart the computer. The SSL Soundscape Mixer software will start automatically and Windows will request the WDM/KS drivers. Install them when prompted.

NOTE: Multiple SSL Soundscape Mixpanders can be installed at the same time. To install more SSL Soundscape Mixpander cards at a later time, simply repeat steps 2., 3. and 5..

All the steps above are described in greater detail in the following sections.

Installing the SSL Soundscape Mixpander

***NOTE:** The guidelines below are general and apply in most cases. However, since all PCs are different, it is advisable to check your computer's instruction manual for specific information. For example, for some PCs, the front panel needs to be removed first in order to access the cover mounting screws.*

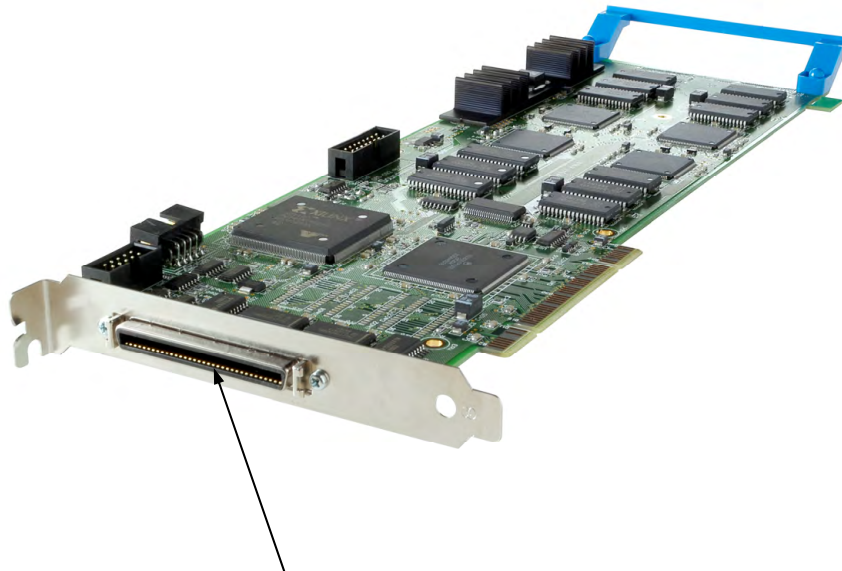
***NOTE:** If possible, use an anti-static wristband when installing the SSL Soundscape Mixpander. If not, touch the computer casing before you touch the card, and avoid touching the circuit board or components unnecessarily (although you will need to push the edge of the circuit board in order to fit the card into a PCI slot).*

1. Turn off all power to your computer, unplug it from the mains and disconnect all peripheral devices.
2. Remove the computer cover. This usually involves removing some screws, sliding the cover forwards or backwards, and then lifting it away from the base.
3. Position the computer so that you can easily see and access its motherboard.
4. Locate a free full length PCI expansion slot and remove the corresponding expansion slot cover from the back of the computer. This involves removing a screw, which will be used later to secure the card into place.
5. Grab the card by its metal backplate and place the gold-fingered edge connector directly above the chosen PCI expansion slot on the computer's motherboard, with the 68-pin connector facing towards the rear panel. Gently push the card into the slot until it fits into place. You may place your fingers on the edge of the card to push it into place without using excessive force. Make sure the card is fully inserted into the slot before proceeding to the next step.
6. Use the screw which held the expansion slot cover to secure the card.
7. Replace the computer cover and secure it with the screws removed in step 2.
8. Connect the Expansion Bus port on the backplate to the Expansion Bus port on the back of the Alpha Link unit. The SSL Soundscape Mixer software will only recognize an SSL Soundscape Mixpander if a suitable XLogic Alpha-Link unit is connected and switched on.

WARNING: The PC and Alpha-Link must be switched off when connecting the Expansion Bus ports, otherwise damage may result.

Connecting the SSL Soundscape Mixpander to the XLogic Alpha-Link

The SSL Soundscape Mixpander features a single Expansion Bus connector (or “expansion port”):



Expansion Bus connector

Use the supplied Expansion Bus cable to connect the SSL Soundscape Mixpander’s Expansion Bus port to the XLogic Alpha-Link’s Expansion Bus port:



Installing the SSL Soundscape Device Drivers

The driver installation procedure is similar under Windows 2000 and Windows XP

Windows needs to find the “Ssdev.inf” file which is part of the Soundscape Device Driver installation files. For the WDM/KS driver, the file is named “Sswdm.inf”.

Installing hardware drivers is in itself a Windows procedure and is described in the Windows documentation. The installation procedure under Windows XP is described here for convenience.

WARNING: Please do not install the drivers unless your Windows installation is running correctly (as implied in the “System Requirements” section above). Preferably, do not attempt to install the SSL Soundscape Device Drivers if any hardware components other than the SSL Soundscape Mixpander card(s) need drivers to be installed.

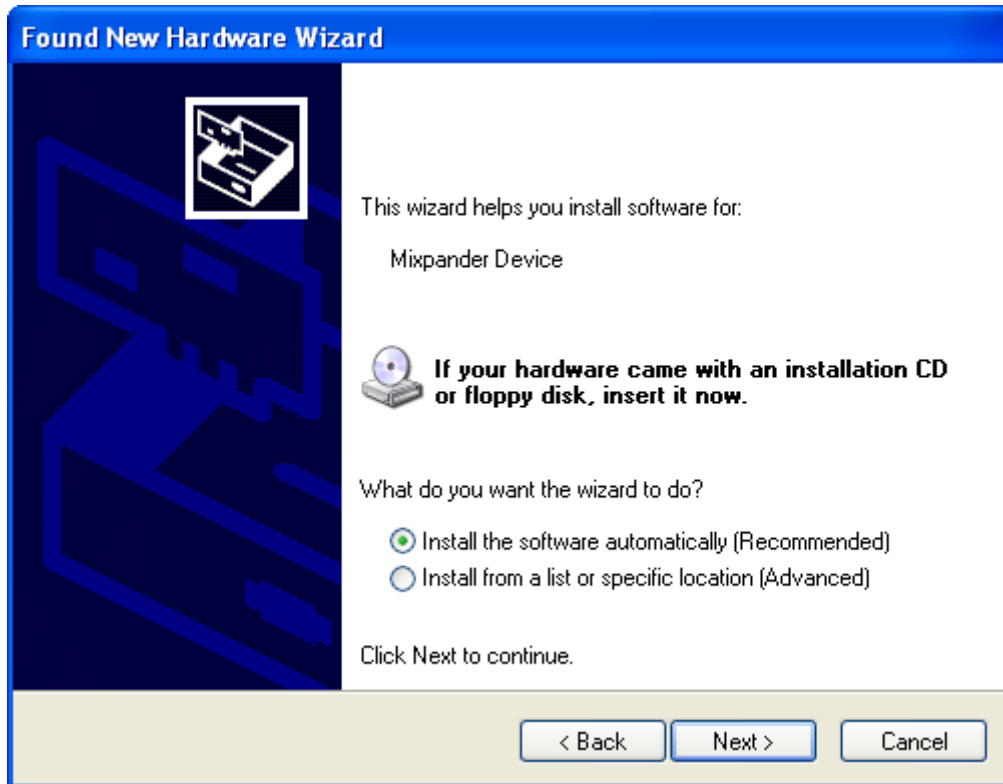
***NOTE:** Whenever a new version of the SSL Soundscape Mixer is installed, any old drivers that are detected are automatically overwritten with the latest ones. Therefore it is normally not possible to use the latest version of the Mixer with old drivers.*

Installing the SSL Soundscape Device Drivers under Windows XP

The SSL Soundscape Mixpander card is “Plug and play”, and is automatically detected by Windows when the computer is started after installing the card in a PCI slot. Then a dialog box is displayed which lets you choose between an automatic or a manual installation procedure. Select “No, not this time” and click “Next”:



Windows will then invite you to insert the installation CD for your hardware. Insert the SSL Soundscape Mixpander Installation CD. Windows will normally detect it automatically and find the driver files (otherwise you will just need to click “Next” for the installation to start):



Further windows will be displayed while Windows copies the driver files. Depending on the specifics of your system, this could take a few seconds or a few minutes.

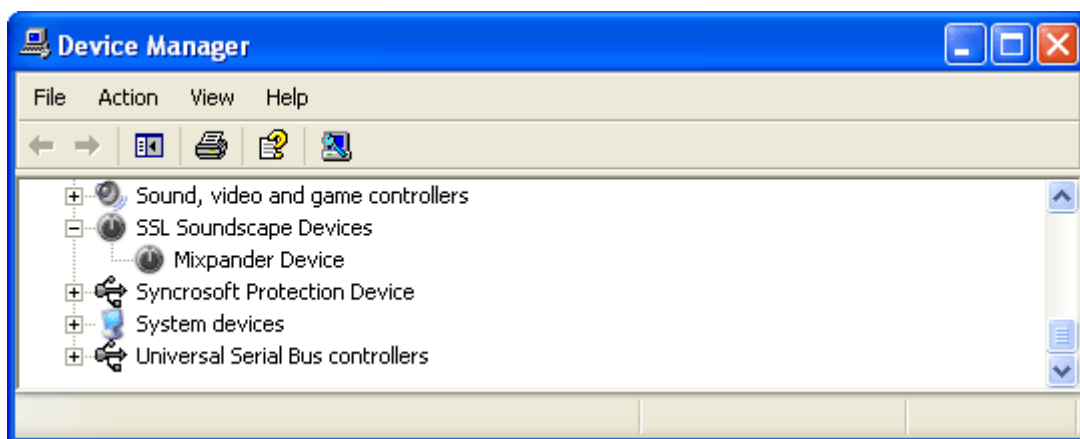


Eventually, the dialog box below confirms that the installation has been completed. Clicking “Finish” closes the Wizard:



Device Manager

After a successful installation, the SSL Soundscape Mixpander appears in the “SSL Soundscape Devices” category in the Windows Device Manager:



Preparing Windows Plug and Play

If you prefer, you can also prepare the Windows Plug and Play system to recognize your SSL Soundscape Hardware automatically.

In order to do this, before physically installing the hardware, run the SSL Soundscape Driver Setup program (DrvSetup.exe) located in the “DRIVER” folder of the SSL Soundscape Mixpander installation CD (or in the Ssdrvxxx folder, where xxxx is the driver version number, if you have downloaded the driver installation package from our website).

You can start this program in the CD navigator by clicking the “Install Driver” button:

Install Driver button



In the SSL Soundscape Driver Setup program window, press the “UPDATE” button to copy the driver data to your Windows installation.



After physically installing the SSL Soundscape Mixpander and starting up the computer, Windows Plug and Play will detect the card and the “Found New Hardware” Wizard will appear, prompting you to install the driver (i.e., assign them to the card).

Select “No, not this time” in the first Wizard dialog box, click Next, select “Install the software automatically” (Recommended) in the second dialog box, click Next and the Wizard will complete the installation.

Installing the SSL Soundscape Mixer software

To install the SSL Soundscape Mixer software, insert the SSL Soundscape Mixpander Installation CD. The CD navigator will be displayed. Click the “Install Mixer” button and follow the instructions on screen.

Install Mixer button



NOTE: If for any reason the CD navigator is not displayed (for instance when the CD has been inserted earlier and you have closed the navigator), you can reopen it in Windows Explorer, by exploring the CD contents and clicking “CD_Start.exe” (or “CD_Start” if the extension is hidden).

If you have downloaded the SSL Soundscape Mixer software installation package from the Solid State Logic website, decompress the files to a folder of your choice.

NOTE: The software is supplied on a physical medium as part of the SSL Soundscape Mixpander package. However, it is always advisable to download the latest version from our website.

To install the Soundscape Mixer software, simply click the Setup.exe file located in the “Disk 1” folder of the software installation package and follow the on-screen instructions.

We strongly advise that you install the software using the default paths (c:\Program Files\Soundscape and c:\Soundscape). In case you should ever need it, technical support is easier to provide if all the files are installed where expected.

Shortcuts and automatic SSL Soundscape Mixer startup

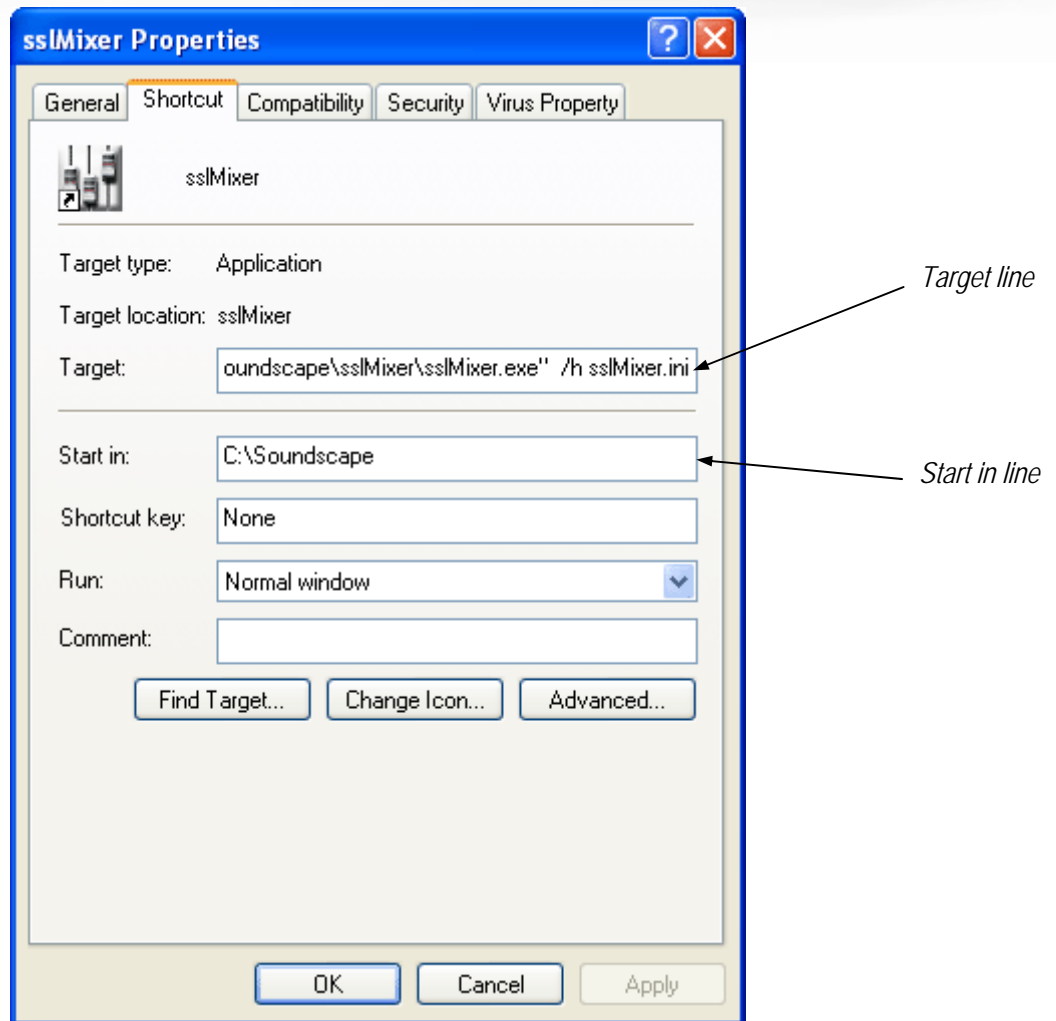
A default shortcut for the SSL Soundscape Mixer is created in the Start Menu and is also copied into the Startup folder so that the SSL Soundscape Mixer software starts when you power up your PC. You can prevent the SSL Soundscape Mixer software from starting automatically on start up by using Windows Explorer to locate and delete the shortcut in the Startup folder. The default path is "C:\Documents and Settings\All Users\Start Menu\Programs\Startup"

If you create a shortcut manually (e.g., on the desktop), "sslMixer.ini" should be added at the end of the Target line (to see the Target line, right-click the shortcut and click "Properties"). You can also include "/h" for the SSL Soundscape Mixer to start hidden (i.e., with the main window closed but accessible from the system tray icon). The full line would read:

"C:\Program Files\Soundscape\sslMixer\sslMixer.exe" /h sslMixer.ini

Note the spaces before "/h" and before "sslMixer.ini".

The "Start in" line should read "C:\Soundscape" (if you installed using a default path) for the program to locate the subfolders for mixer files and mixer element presets. If you change to another Start In folder, then it is also useful to recreate the same subfolder structure as can be found in C:\Soundscape.



Multiple cards are detected automatically by the software during startup. The Alpha-Link AX, Alpha-Link MADI AX or Alpha-Link MADI-SX must be connected and switched on.

Installing Soundscape format DSP-powered plug-ins

To install Soundscape format DSP-powered plug-ins, insert the SSL Soundscape Mixpander Installation CD. The CD navigator will be displayed. Click the “Install Plug-Ins” button.

Install Plug-Ins button



NOTE: If for any reason the CD navigator is not displayed (for instance when the CD has been inserted earlier and you have closed the navigator), you can reopen it in Windows Explorer, by exploring the CD contents and clicking “CD_Start.exe” (or “CD_Start” if the extension is hidden).

Click the icon of the first plug-in you want to install and follow the instructions on screen. Repeat the operation for every plug-in you wish to install.



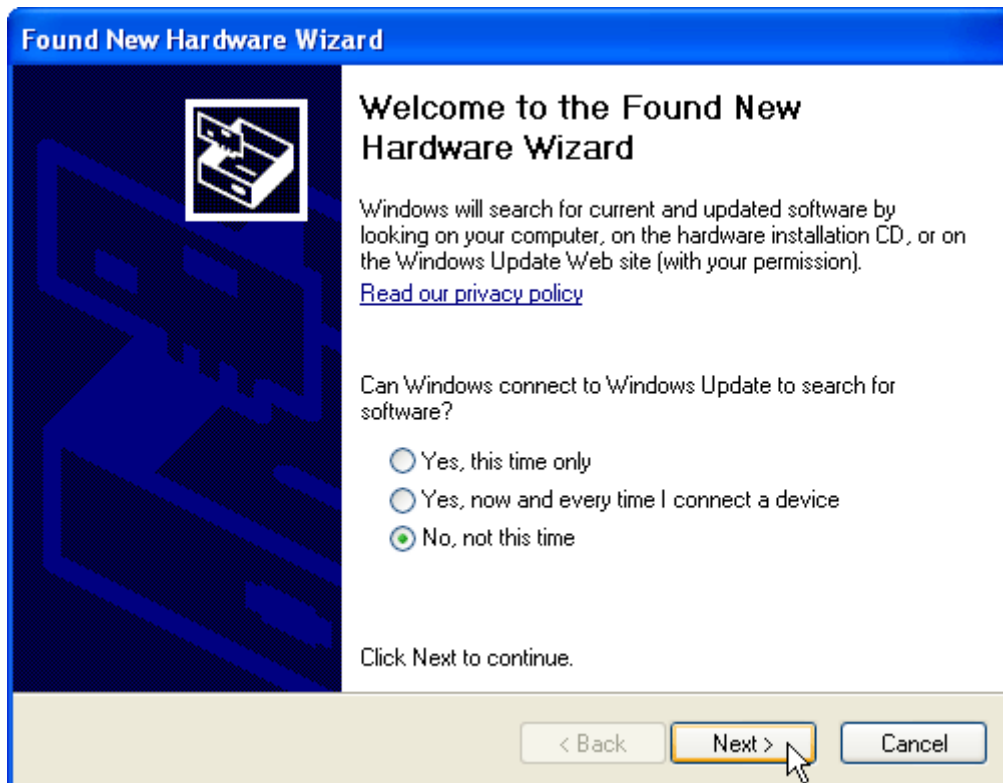
Demo versions are provided for some of the plug-ins. If you wish to install demo versions, click the “Demo Menu” button in the Plug-in Menu window (above) to access the plug-in demo list. Then click the icon of the demo you want to install and follow the instructions on screen. Repeat the operation for every plug-in demo you wish to install.



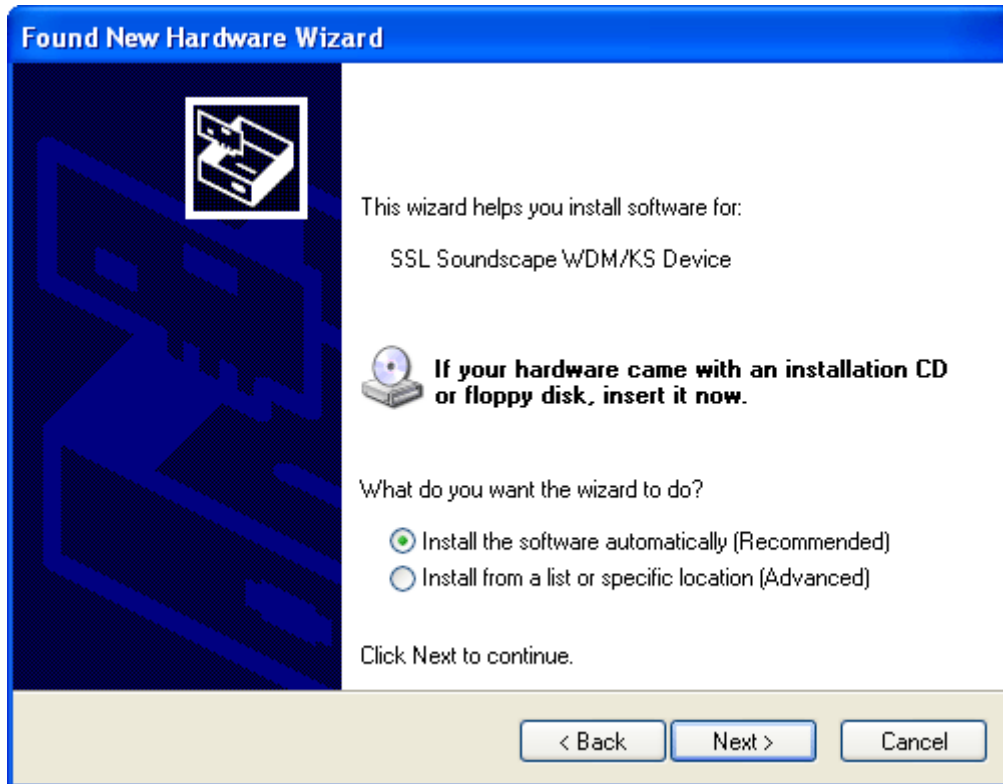
Installing the SSL Soundscape WDM/KS Driver under Windows XP

Plug and play device detection

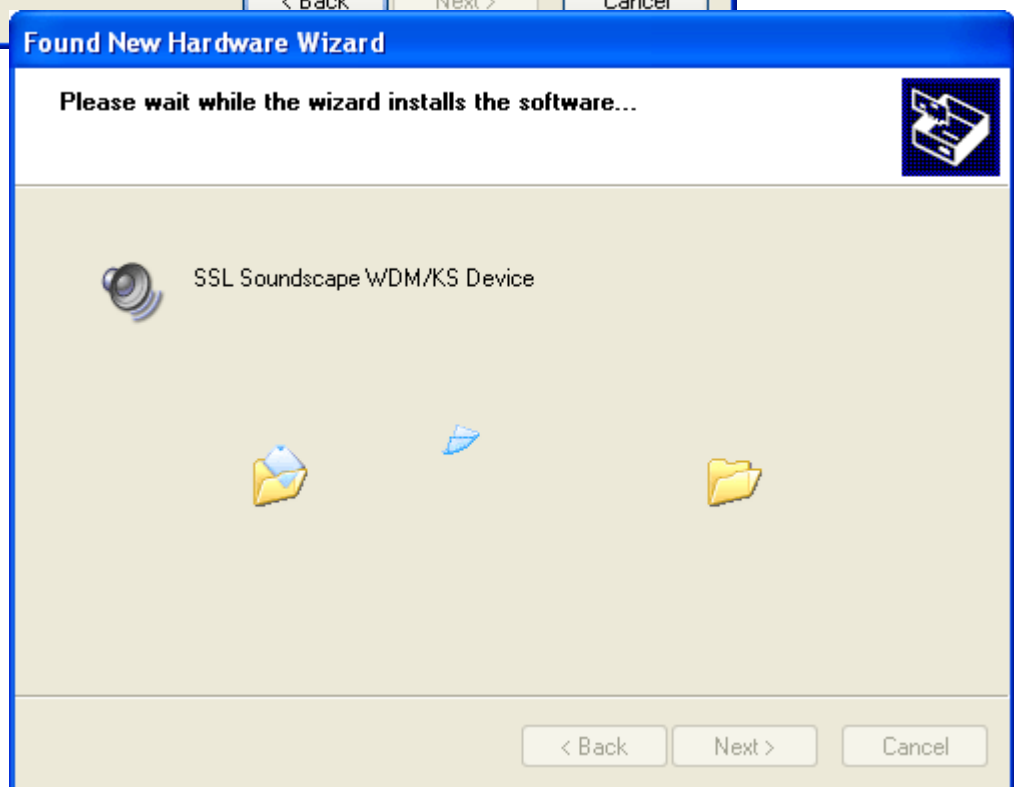
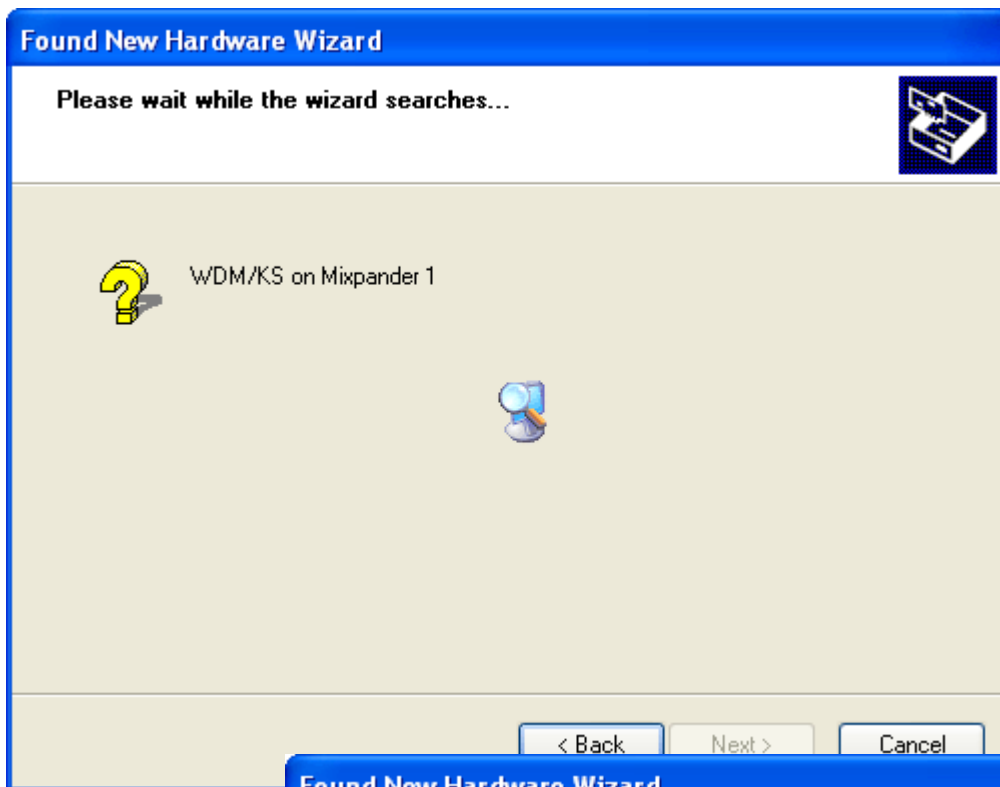
When the SSL Soundscape Mixer is started for the first time after the SSL Soundscape Mixpander has been installed, the Windows “Found New Hardware Wizard” starts automatically (the XLogic Alpha-Link unit must be switched on). A dialog box is displayed which lets you choose between an automatic or a manual installation procedure. Select “No, not this time” and click “Next”:



Windows will then invite you to insert the installation CD for your hardware. Insert the SSL Soundscape Mixpander Installation CD. Windows will normally detect it automatically and find the WDM/KS driver files (otherwise you will just need to click “Next” for the installation to start):



Further windows will be displayed while Windows copies the WDM/KS driver files. Depending on the specificities of your system, this could take a few seconds or a few minutes.



Windows then displays a warning regarding “Windows Logo testing”. The mention that the SSL Soundscape WDM/KS Device “has not passed Windows Logo testing...” may give the impression that the driver failed a test. This is NOT the case and this message can safely be ignored. Click “Continue Anyway”:



NOTE: “Windows Logo testing” is a procedure which would only add to the cost of your SSL Soundscape system and would make no difference to its operation.

Eventually, the dialog box below confirms that the installation has been completed. Clicking “Finish” closes the Wizard:



Software updates and uninstalling older software versions

New versions of the SSL Soundscape Mixer software can be downloaded from our website. To install the new version of the software, first decompress the downloaded file to a folder of your choice. Then locate the “disk1” folder which is part of the decompressed data, open it and double-click the SETUP.EXE application icon to launch the installer. Then follow the instructions on screen.

When you need to update the SSL Soundscape Mixer software, you can use the “Add or Remove Programs” utility from the Windows Control Panel to uninstall the older version.

Make sure that you do not remove “common files” or files that may be used by other applications. If you wish to remove all the files that were originally installed with the older version of the software, then uninstall that version before installing the new one. You can remove “common files”, but not the ones that may be used by other SSL Soundscape applications.

To proceed, select the program version to be deleted from the list and click “Change/Remove”.

Driver updates and uninstalling older driver versions

New versions of the Soundscape Device Driver can be downloaded from our website. To install the new version of the driver, first decompress the downloaded file to a folder of your choice. Then locate and double-click the DrvSetup.exe icon, which is part of the decompressed data, to launch the Setup program. Click the Update button to update the driver, or the Remove button if you want to remove it, and follow the instructions on screen. Click “Done” to close the SSL Soundscape Driver Setup window.



IMPORTANT: The computer must always be restarted after the SSL Soundscape Device Driver has been updated or removed.

***NOTE:** The SSL Soundscape Device Driver only can also be removed by opening the Windows Control Panel, clicking “Add or Remove Programs”, selecting “SSL Soundscape Driver (remove only)”, clicking the Change/Remove button and following the on-screen instructions.*

Configuring a multiple unit system

The SSL Soundscape Mixer software can support multiple SSL Soundscape Mixpander cards. The cards are identified as Unit 1, Unit 2, Unit 3 and so on.

All the cards in a multiple unit system must be synchronized to the same Master Clock signal, which can be provided by one of the connected XLogic Alpha-Link units.

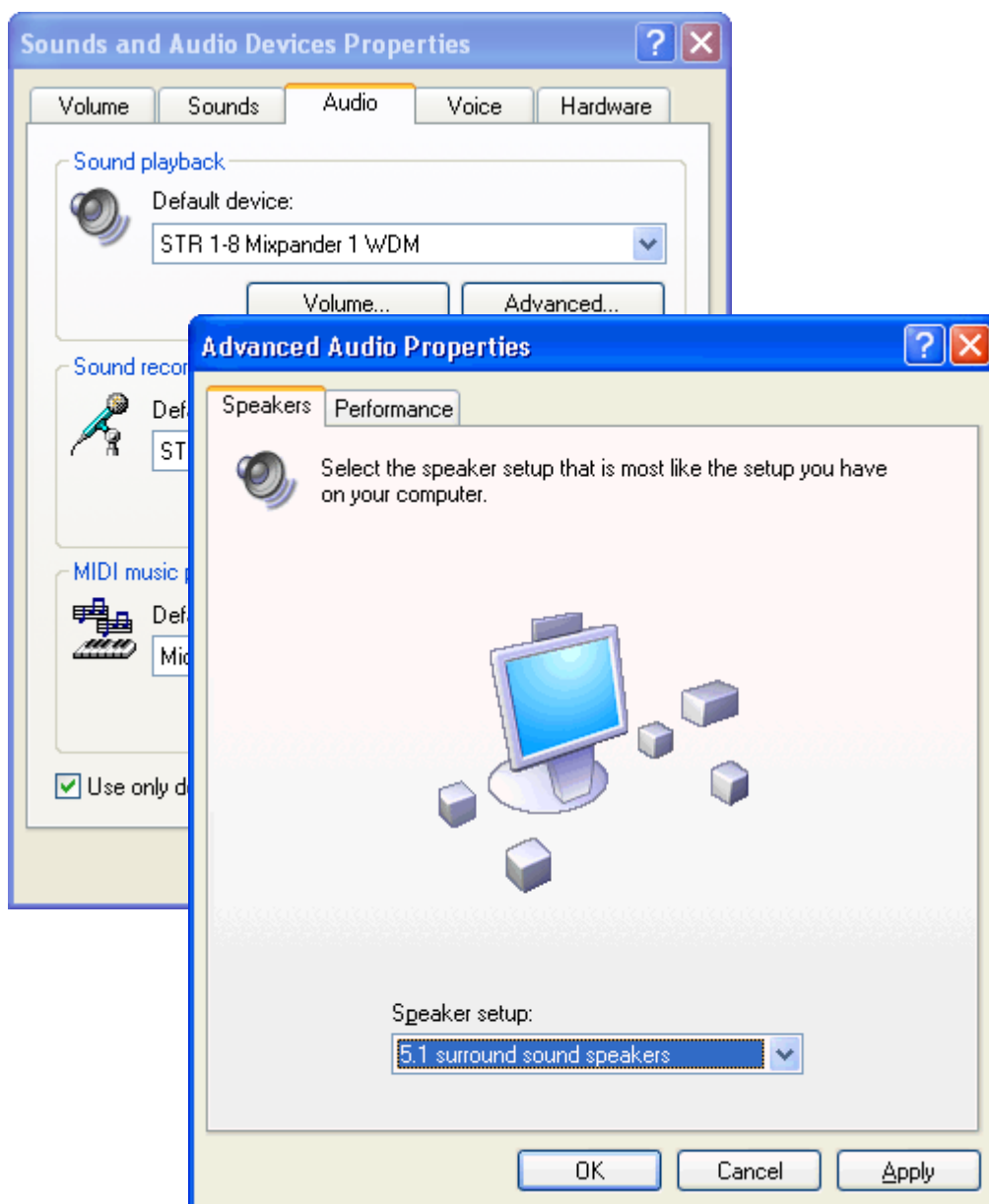
WordClock connections can be established between the WordClock connectors of the Alpha-link units to distribute the Clock signal.

Before attempting to configure a multiple unit system, please read the Settings Menu chapter of the SSL Soundscape Mixer Reference Guide for more information on Master Clock settings.

4. Driver Settings

Using the WDM/KS drivers

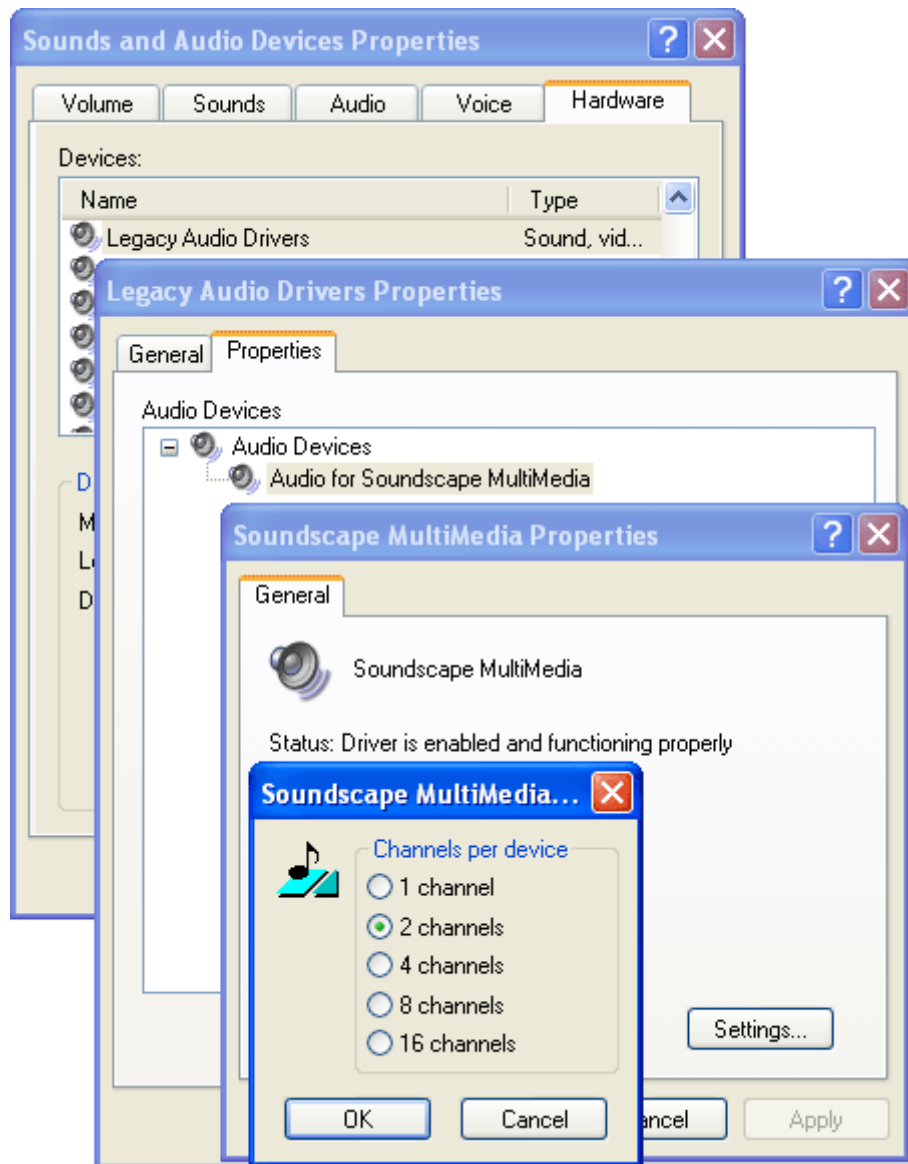
The WDM/KS drivers are loaded during log on. These drivers can be set up in the Windows Control Panel, Sounds and Audio Devices, Audio tab. The individual inputs and outputs are always listed as pairs. However multichannel audio can be used (under Windows XP only). "Mixpander x WDM (where x is the unit number) must be selected as the default audio device for sound playback. The speaker configuration must be selected in the "Advanced Audio Properties" window, which can be opened by clicking the "Advanced" button in the "Sounds and Audio Devices Properties" window:



Multichannel compatible applications will output multichannel audio via the selected card according to the selected speaker configuration.

Using the Multimedia (MME) drivers

The legacy MME drivers are loaded during log on. They are still available for compatibility with certain applications:



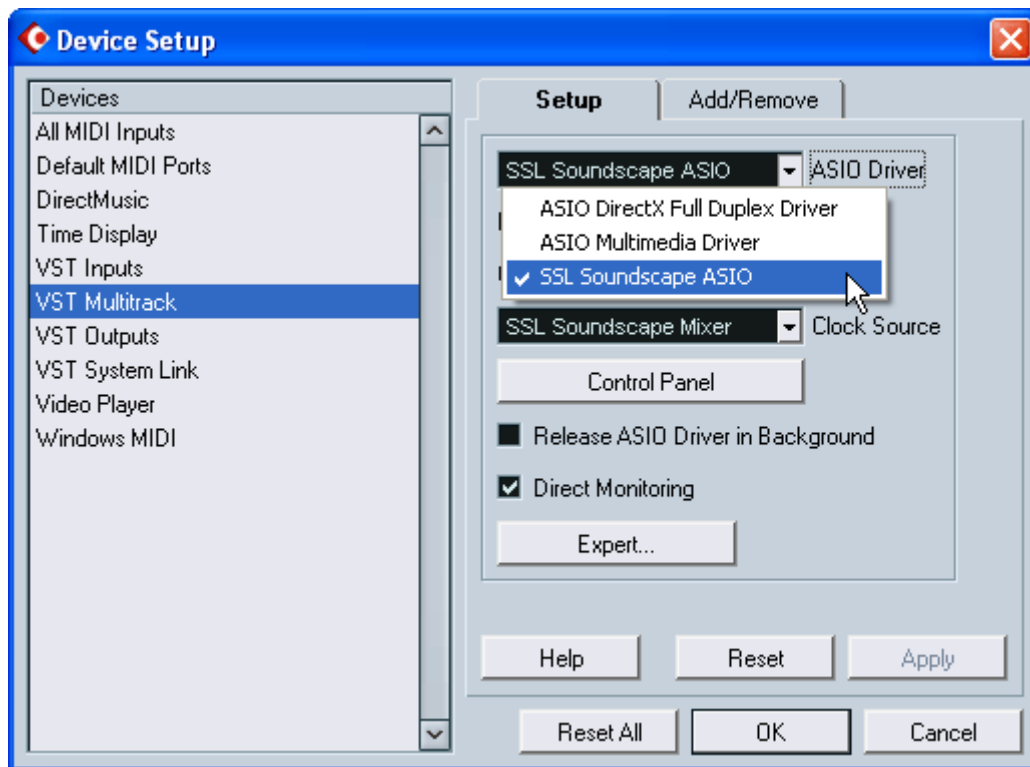
The default setting is for multiple stereo input and output devices (i.e., one SSL Soundscape Mixpander = thirty-two stereo devices). However this setting can be changed in the Windows Control Panel, Sounds and Audio Devices. Click the Hardware tab, select “Legacy Audio Drivers”, double-click the Properties button to open the Legacy Audio Drivers Properties window, click the

Properties tab, expand “Audio Devices”, select “Audio for Soundscape Multimedia”, click the Properties button to open the Soundscape Multimedia Properties window, click the Settings button and use the dialog box to enter your choice of configuration. Close the windows using the OK buttons.

Using the SSL Soundscape ASIO-2 driver

ASIO (Audio Streaming Input Output) is a Steinberg specification, originally developed for Cubase VST and used thereafter in subsequent versions of Cubase and Nuendo, that provides a more direct interface for multi-channel audio streaming than Multimedia drivers. ASIO-2 provides additional features with Cubase or Nuendo for cards with real-time DSP capabilities. One feature allows switching the monitoring from play to record, so that there’s no delay in monitoring the input signal through the PC. Another feature is the ability to use accurate hardware synchronization capabilities via the card and ASIO-2 driver.

The SSL Soundscape ASIO-2 driver is automatically installed as part of the SSL Soundscape Device Drivers and should be available for selection in Cubase or Nuendo under the name “Soundscape ASIO”. In Cubase SX select Device Setup under the Devices menu, click “VST Multitrack” and use the ASIO Driver selection box:



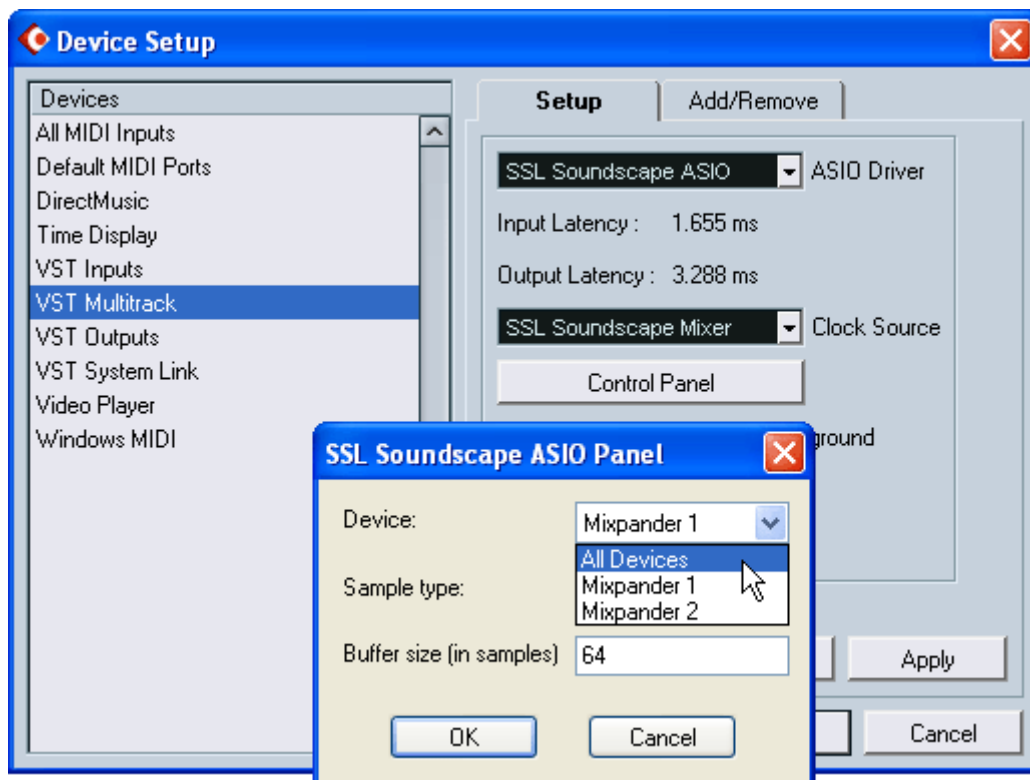
The “Direct Monitoring” box should be checked to switch monitoring between the input (for recording) and output (for playback) from Cubase or Nuendo. The “Mix input always” function of

the SSL Soundscape Mixer's track insert elements can then be disabled (as described in the "Track inserts" section of the "Mixer" chapter in the Soundscape Mixer Reference Guide).

The "Release ASIO Driver in Background" box should be unchecked. If it is checked, the audio output from Cubase SX or Nuendo will stop when the window is minimized.

Multiple SSL Soundscape hardware devices and Cubase

The ASIO-2 driver specification allows for only one audio card to be used at any single time. However, the current implementation of the SSL Soundscape Device Driver allows multiple SSL Soundscape audio cards to be used simultaneously under ASIO-2 by presenting them to the application as a single device. In order to use multiple cards simultaneously, "All Devices" must be selected in the SSL Soundscape ASIO Panel. To open the SSL Soundscape ASIO Panel in Cubase, click Device Setup under the Devices menu, select "VST Multitrack" and click the "Control Panel" button (example based on Cubase SX Version 2.2):



NOTE: There is a risk that Cubase SX will "freeze" on startup if it does not detect the hardware it was using the last time it was stopped. Therefore, if you install an SSL Soundscape audio card to replace a previous soundcard, do not remove the old soundcard until you have installed the SSL Soundscape audio card, started Cubase and set it to use the SSL Soundscape audio card. For the same reason, make sure the SSL Soundscape Mixer is running before launching Cubase.

5. Quick Start Tutorial

Starting the SSL Soundscape Mixer for the first time

At this point, it is assumed that you have:

1. Installed an SSL Soundscape Mixpander PCI audio card in your PC and connected your XLogic Alpha-Link unit.
2. Installed the SSL Soundscape Device Drivers.
3. Installed the SSL Soundscape Mixer software.

You are now ready to start using the SSL Soundscape Mixer. Please read the information in this chapter carefully, and if you need further assistance check the Table of Contents and/or Index of this QuickStart Guide, or the SSL Soundscape Mixer Reference Guide, for more information.

The SSL Soundscape Mixer software will start automatically when you start the computer (because a shortcut is placed in the Windows Startup folder automatically during the software installation).

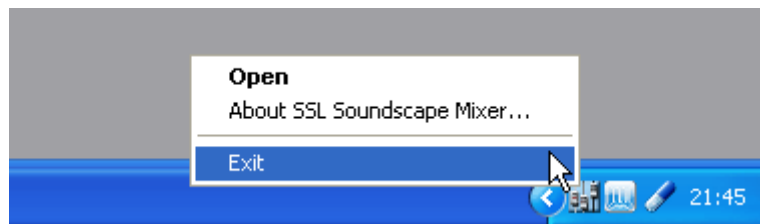
You will first be greeted by a dialog box prompting you to enter your mixer password. This will be described in detail in this chapter.

The SSL Soundscape Mixer remains active until you exit the program, even when it is hidden. Double-click the Mixer icon in the system tray, normally located at the bottom right-hand side of your screen, to open the SSL Soundscape Mixer window:



If the software was not automatically started when the PC was powered on (i.e., if you deleted the shortcut from the Startup folder), you can start it up from the “sslMixer” entry in the Windows Start Menu (Start button|Programs|Solid State Logic|SSL Soundscape Mixer). Then click the system tray Mixer icon whenever you want to display the main SSL Soundscape Mixer window.

To close the SSL Soundscape Mixer software, you can either right-click the Mixer icon and click Exit...:



...or click Exit under the File menu from within the program:



Entering the mixer password

The SSL Soundscape Mixer software is protected by a password system, whereby a password is generated according to the individual DSP serial number of the SSL Soundscape hardware installed on the host computer. The optional Soundscape format DSP-powered plug-ins are also protected by this system. However, while the Mixer can be used without any optional plug-ins, the Mixer's own password must be entered in order for any audio to be routed through it.

***NOTE:** All the existing passwords for an SSL Soundscape hardware unit can be obtained from our website if you have registered that unit.*

When the SSL Soundscape Mixer runs for the first time on your computer, a dialog box will be displayed, inviting you to enter the mixer password:



The password can be found on the SSL Soundscape Mixpander Product Registration card, on a label on the card itself, on the product packaging or on our website if you have registered the product. Enter it in the Mixer password box and click the Save Password button.

If the password you entered was correct, you will see a confirmation message and you will be able to use the mixer:



If the password you entered was incorrect, a different dialog box will be shown, allowing you to try again:

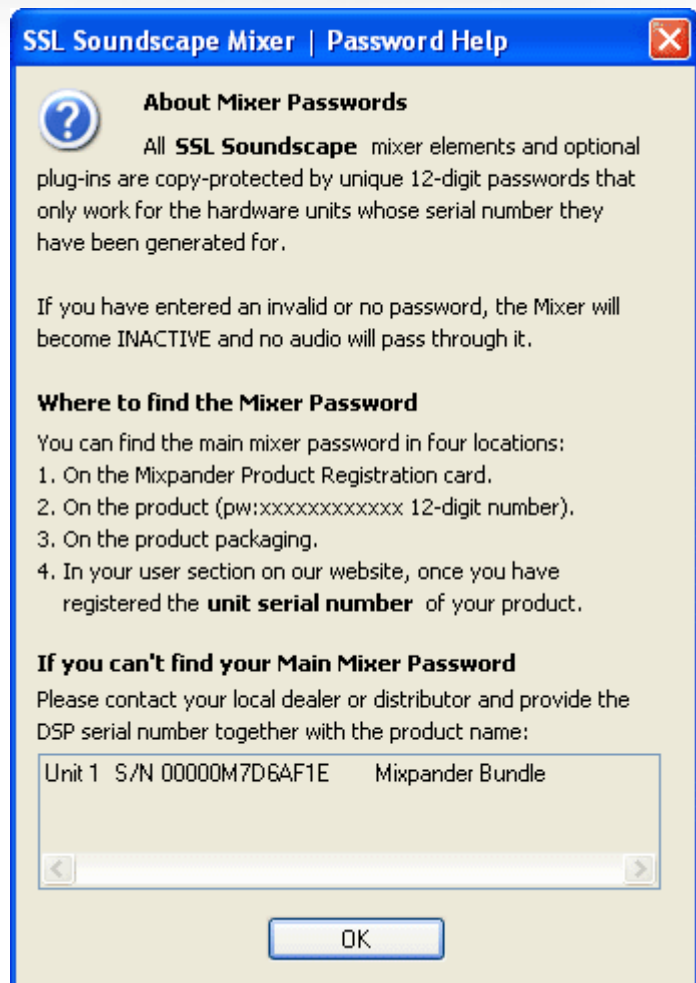


If you click Cancel when the first dialog box is shown, you will see a further dialog box:



Clicking "OK" will allow you to open the SSL Soundscape Mixer. You will be able to look at the software, check out the menus, but you will not be able to hear any audio! Click the Go Back button to enter the password.

Clicking the Help button in any of the dialog boxes described above will open the Password Help dialog box:



If the password was not entered the first time you used the software, a different dialog box will be shown the next time you start the program. Click OK to access the main SSL Soundscape Mixer Passwords window, which can also be accessed at any time under menu: Settings | Passwords:



Setting the Master Clock

For digital devices to transmit and receive audio data they must be synchronized using a “Master Clock” signal. The clock master device generates and transmits this signal, the clock slave device (or devices) receives it and locks to it.

The SSL Soundscape Mixpander does not have an on board Master Clock generator. Therefore it must receive a Master Clock signal from the Alpha-Link unit (the SSL Soundscape Mixpander + Alpha-Link **combination** will typically be the “clock master”). Set the Master Clock source to Internal under menu: Settings|Master Clock. Note that the selection button on the front panel of the Alpha-Link is disabled when the Alpha-Link is used with an SSL Soundscape Mixpander. If the Alpha-Link is connected to another digital device (e.g., via MADI in the case of an Alpha-Link MADI SX/AX), this other device should be set to lock to the Master Clock signal received from the Alpha-Link.

WARNING: Do not to turn up the monitoring level until Master Clock synchronization is established between the card and interface unit, as it is possible to get high noise levels with un-synchronized A/D and D/A Converters.

Please refer to the Settings Menu chapter of the SSL Soundscape Mixer Reference Guide for more detailed information.

Mixer concepts

The SSL Soundscape Mixer is a totally user configurable environment. Every input, output, send, EQ module, effect plug-in or peakmeter etc., is a “mixer element” that can be inserted anywhere you want it in the Mixer. Mixer elements can also be copied or dragged to a new place in the signal path and entire mixer columns can also be copied. This means that you can create the exact mixer configuration that you need for any given project, down to the last detail.

The only fixed parameters are the number of streams, number of buses and number and type of physical inputs and outputs available per SSL Soundscape Mixpander (according to the XLogic Alpha-Link model connected to that card).

However, you do not need to build an entire console every time you get started on a new project! Mixer configurations can be loaded and saved, and a number of such mixer files are provided to get you started.

Before we describe the default mixer loaded on startup (64 Ch Mixer.mix), we need to define the terms “inputs and outputs”, “buses” and “streams” in the SSL Soundscape Mixer context:

- **Inputs and Outputs:** physical connections available for audio devices outside the host computer, such as microphone preamps, mixing desk, stereo mastering recorder and so on (i.e., the inputs and outputs are the connectors on the XLogic Alpha-Link). They may be called “physical” or “external” inputs and outputs and should not be confused with the “input elements” and “output elements” in the SSL Soundscape Mixer software. In particular, while input elements and output elements may be assigned to an external input or output, they may just as well be assigned to a bus or stream...

- **Buses:** audio paths/connections that can be used to route audio signals between different parts of the SSL Soundscape Mixer, for instance between a send element and an input element. For the purpose of this manual, “buses” only exist within the SSL Soundscape Mixer.

- **Streams:** audio paths/connections that can be used to route audio signals either way between the SSL Soundscape Mixer and Windows applications such as MIDI+audio sequencers or virtual instruments.

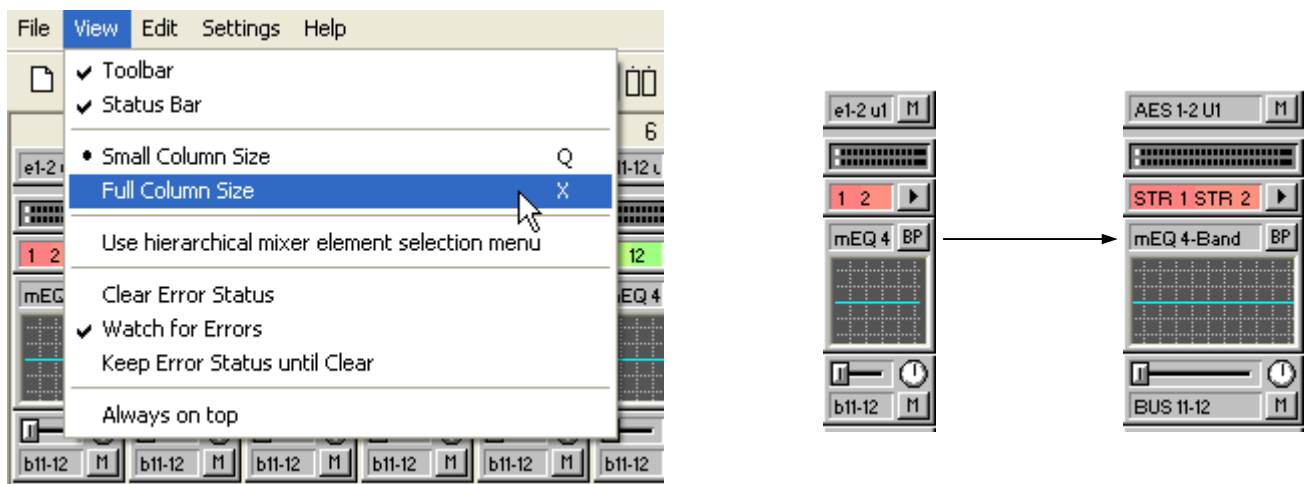
Mixer example: the default 64 Ch Mixer

This is the default configuration loaded when you start the software for the first time. It allows audio data received at any AES/EBU or ADAT (depending on model), or Analogue input of the XLogic Alpha-Link to be routed through the Mixer (i.e., each successive pair of physical inputs of the Alpha-Link is connected to at least one of the first 32 stereo mixer columns). This means that you will hear something when you install your SSL Soundscape Mixpander in your studio for the first time with sound sources connected to any of these inputs. The output signals from these 32 stereo mixer columns are sent to the “Master L/R” mixer column (column number 33) via BUS 1-2. The summed signal from mixer column 33 is then output via the first digital (AES/EBU or ADAT) and analogue output pair of the XLogic Alpha-Link.

IMPORTANT: The MADI inputs and outputs are not used in this mixer configuration.

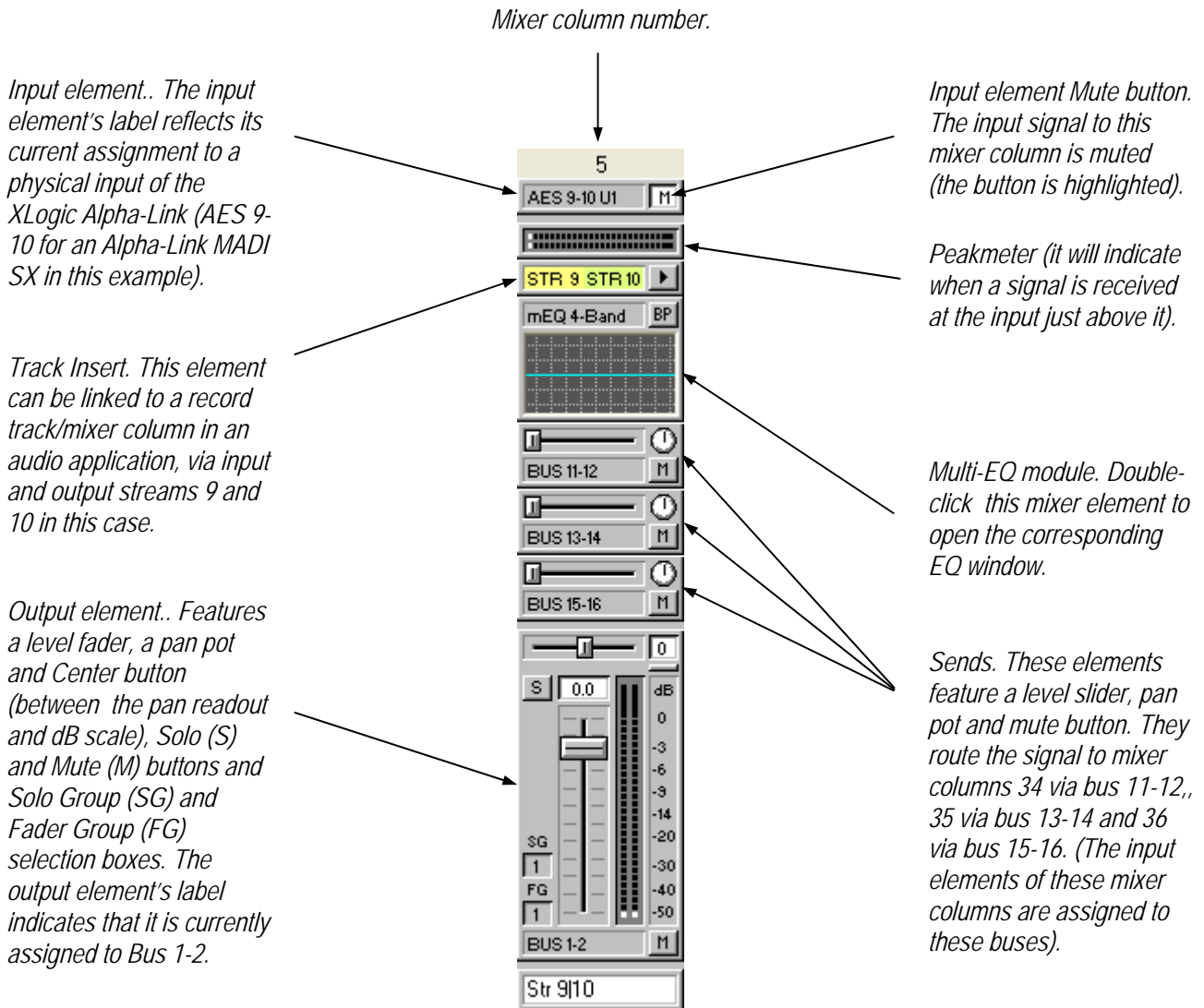
***NOTE:** If the input peakmeter indicates no signal, or maximum level all the time, the Master Clock settings are probably incorrect. Please modify them according to the Settings Menu chapter of the SSL Soundscape Mixer Reference Guide*

First, please note that you can switch the whole SSL Soundscape Mixer window between Small Column Size and Full Column Size view by pressing [Q] or [X] respectively, or by clicking Small Column Size or Full Column Size under the View menu:



The screenshot below is used to describe the structure of mixer columns 1 to 32.

NOTE: The signal path is always from the top to the bottom of the mixer column, so that the order of the mixer elements is an exact reflection of the signal path.



NOTE: The input elements of the first 32 mixer columns are muted by default, except for columns 1 and 13 (the first digital and analogue stereo pairs). If you want to hear sound sources connected to the other inputs, please click the relevant Mute buttons to unmute the corresponding mixer column inputs.

Mixer columns 1 to 32 feature Track Inserts. These mixer elements are designed to send and receive audio data to and from your audio applications via the corresponding streams (they are

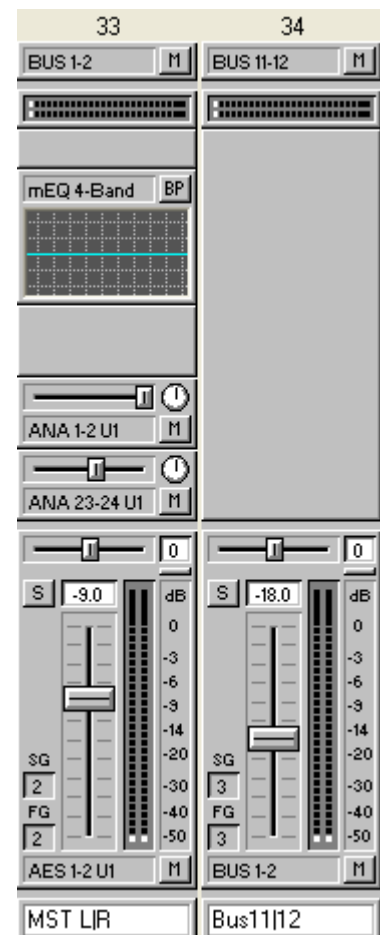
numbered and colour-coded according to the streams they are assigned to). Double-clicking these elements calls up a dialog box where you can enable or disable the “Mix input always” function.



Mix input always is disabled by default when you place a new Track Insert in a mixer column. However, in the case of the default 64 Ch Mixer configuration, we have enabled it for all Track Inserts, so that the input signal can flow through the corresponding channels even when you have not yet started your recording application. When playing back audio from your recording application, you will need to disable Mix input always, otherwise the input signal will be mixed with the signal received from the recording application.

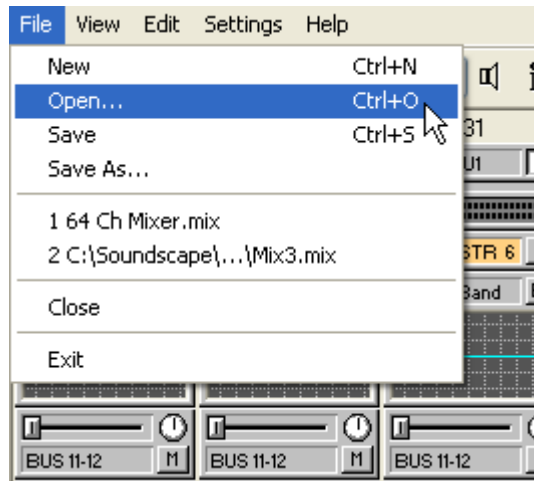
The output signals from mixer columns 1 to 32 are all sent to mixer column 33, where they are summed. Mixer column 33 outputs the resulting summed signal via the first digital output pair of the XLogic Alpha-Link (AES 1-2 in this example, based on an XLogic Alpha-Link MADI SX). Send elements also route the signal to the first pair of analogue outputs (ANA 1-2), in case your monitoring system needs an analogue connection, and to the last pair of analogue outputs (ANA 23-24), which is duplicated at the headphone output, in case you choose to monitor via headphones.

Mixer columns 34, 35 and 36 receive their signals from the send elements in mixer columns 1 to 32, and route them to mixer column 33 (effectively the “Master L/R” mixer column) via Bus 1-2. When you start editing the mixer configuration yourself, you can insert send effects in these mixer columns.



Supplied mixer files

Various other mixer files are provided, and mixers can be opened and saved using standard Windows dialog boxes via the File menu:



The supplied mixer files include:

- DEF_32 direct IO compact.mix: for 96kHz operation.
- DEF_32 in 2.mix: default for 88 and 96kHz (same as previous).
- DEF_48 in 2.mix: for XLogic Alpha-Link AX users.
- DEF_64 Ch Mixer.mix: Identical to the 64 Ch Mixer (so that if you edit and save the 64 Ch Mixer, you still have an identical copy of it on your hard disk).
- DEF_64 direct IO compact.mix: same as 32 IO compact, for 44.1kHz operation.
- ...and many more! Most mixers have a descriptive name that suggests their intended application(s).

NOTE: Some of the preset mixer files may not load or work correctly if particular plug-ins or plug-in demos are not installed or if the corresponding passwords have not been entered. Plug-in passwords can be entered at any time under menu: Settings\Passwords. Demos are enabled automatically by the main mixer password.

Modifying the routing

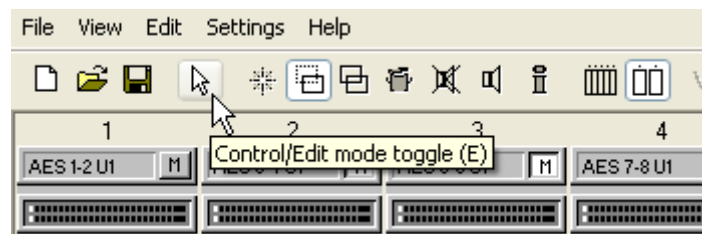
Mixer creation and editing is explained in detail in the SSL Soundscape Mixer Reference Guide. However, you may already want to modify the routing of your signals in the preset configurations. The procedure is described below.

The SSL Soundscape Mixer can operate in two different modes: Mixer Control mode and Mixer Edit mode.

By default, the Mixer is in Control mode. You can use its various controls by clicking or clicking and dragging them, entering values in some of the readouts, etc.

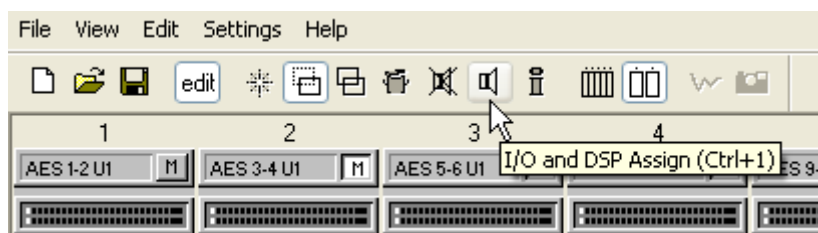
In order to edit any aspect of the mixer configuration, you must switch to Mixer Edit mode.

Toggling between Mixer Control mode and Mixer Edit mode can be done by pressing [E] on the computer keyboard, or by clicking the Control/Edit mode toggle:



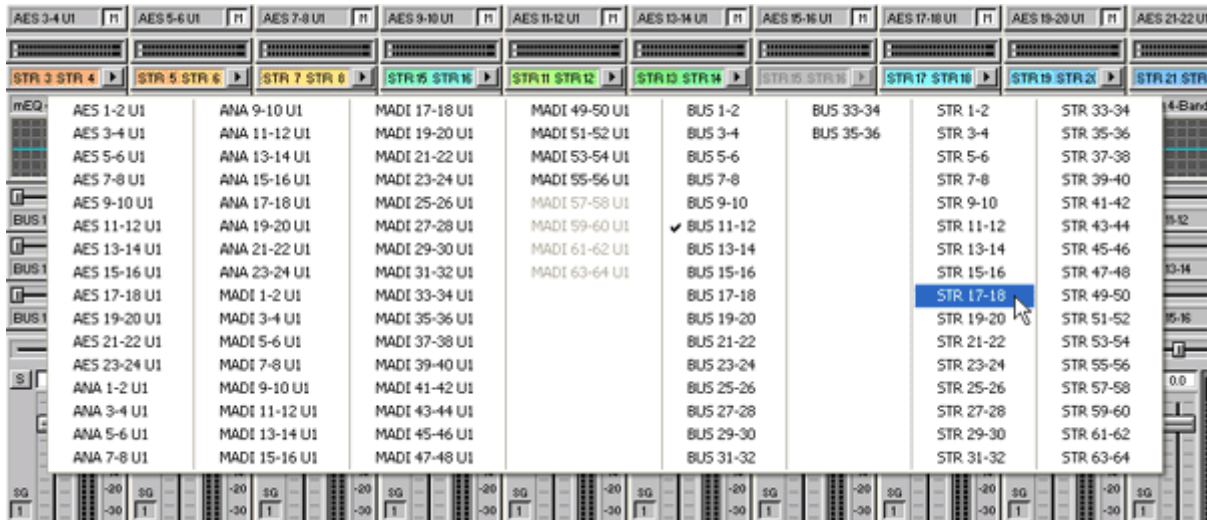
NOTE: The Control/Edit mode toggle looks like an arrow in Control mode. It changes aspect when switching to Edit mode, as does the mouse pointer, which reflects the current tool selection.

Once in Edit mode, press [Ctrl]+[1] or click the I/O and DSP Assign tool icon to assign the corresponding tool to your left mouse button:

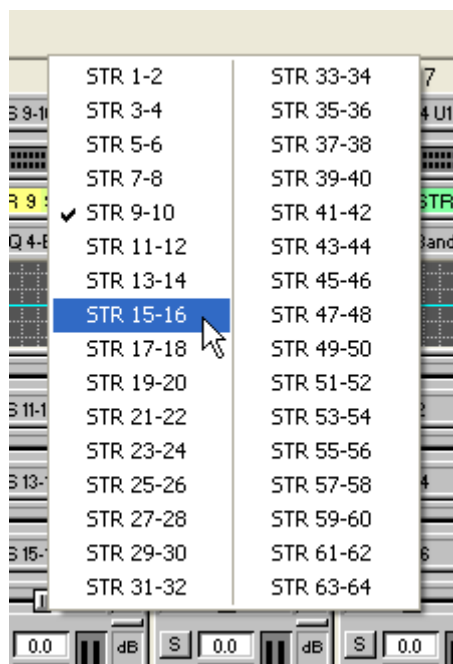


With the I/O and DSP Assign tool selected, clicking an assignable mixer element such as an Input, Output, Send or Track Insert calls up a menu where all the possible signal sources/target destinations appropriate for that element are listed. Click your selection to modify the assignment.

For a Send element, the menu displays all the available physical outputs, buses and streams:



For a Track Insert, the streams are listed:



NOTE: Remember to switch back to Mixer Control mode to use the Mixer!

6. Step by Step Multitrack Recording

Multitrack recording example using the SSL Soundscape Mixer and Cubase SX

NOTE: It is impossible to provide step by step examples for all the recording applications on the market. This example is based on using Cubase SX2.0. The procedure will be similar but not identical for other applications. In particular, the choice of drivers may be different. Please also read the documentation supplied with your chosen application for comprehensive information.

NOTE: For this step by step example it is assumed that a number of stereo tracks will be recorded, that the SSL Soundscape hardware and Mixer software are already installed and that Cubase SX 2.0 or higher is also correctly installed. Sound sources must be connected to up to sixteen SSL Soundscape hardware inputs (eight stereo pairs), and outputs 1 and 2 (AES/EBU, ADAT, analogue or MADI) of the SSL Soundscape hardware must be connected to the monitoring system. It is also assumed that you have spent some time with Cubase and become familiar with its basic operation (such as initiating Play or Record).

1. Make sure that the SSL Soundscape Mixer application is running. If it is not running, start it by clicking the Start Menu shortcut. Load the Mix3.mix mixer file by clicking "Open" under the File menu and using the dialog boxes.

2. If necessary, change the assignment of the input elements in mixer columns 1 to 8, and the assignment of the output element in mixer column 9, using the I/O and DSP Assign tool, as described in the "Modifying the routing" section. For instance, in the example below, the Alpha-Link unit is a MADI SX model and the mixer routing uses the AES/EBU inputs and outputs. Change this to the analogue (or MADI) inputs and outputs if appropriate, depending on the Alpha-Link model you are using and the connections you used for your sound sources and monitoring system.

Input element, column 1 (change the assignment of these elements if necessary in mixer columns 1 to 8)

Output element (change its assignment if necessary in mixer column 9)

3. Launch Cubase SX. Click “Device Setup” under the Devices menu, click “VST Multitrack” in the list on the left of the Device Setup window, and set the ASIO Driver parameter to “SSL Soundscape ASIO”. Click the Control Panel button and make sure the SSL Soundscape hardware is selected as required.

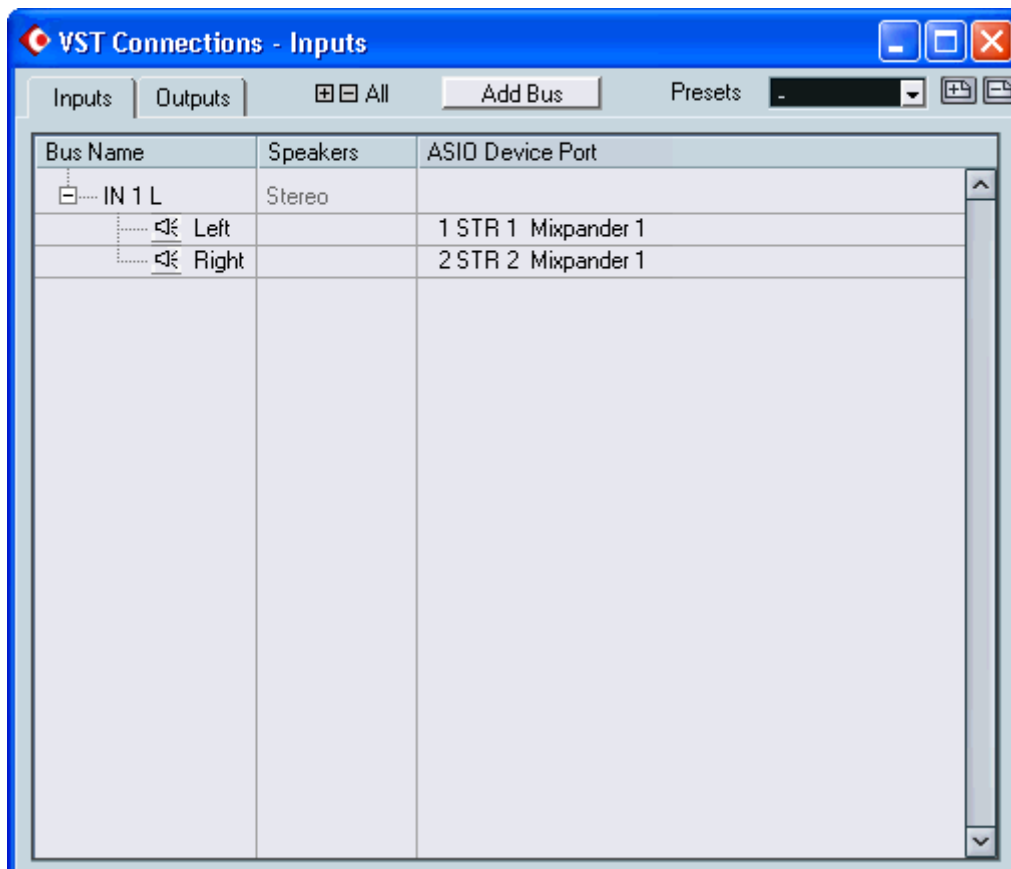
4. Make sure the Master Clock settings are correct. Typically, the SSL Soundscape Mixer will be set to “Internal” under menu: Settings|Master Clock and the Clock Source parameter in Cubase will be set to “SSL Soundscape Mixer” (this is set in the VST Multitrack section of the Device Setup window).

5. In Cubase, click “New Project” under the File menu to open the New Project window, select “24 Track Audio Recorder” and click “OK”. Select or create a folder using the dialog box that will be displayed.

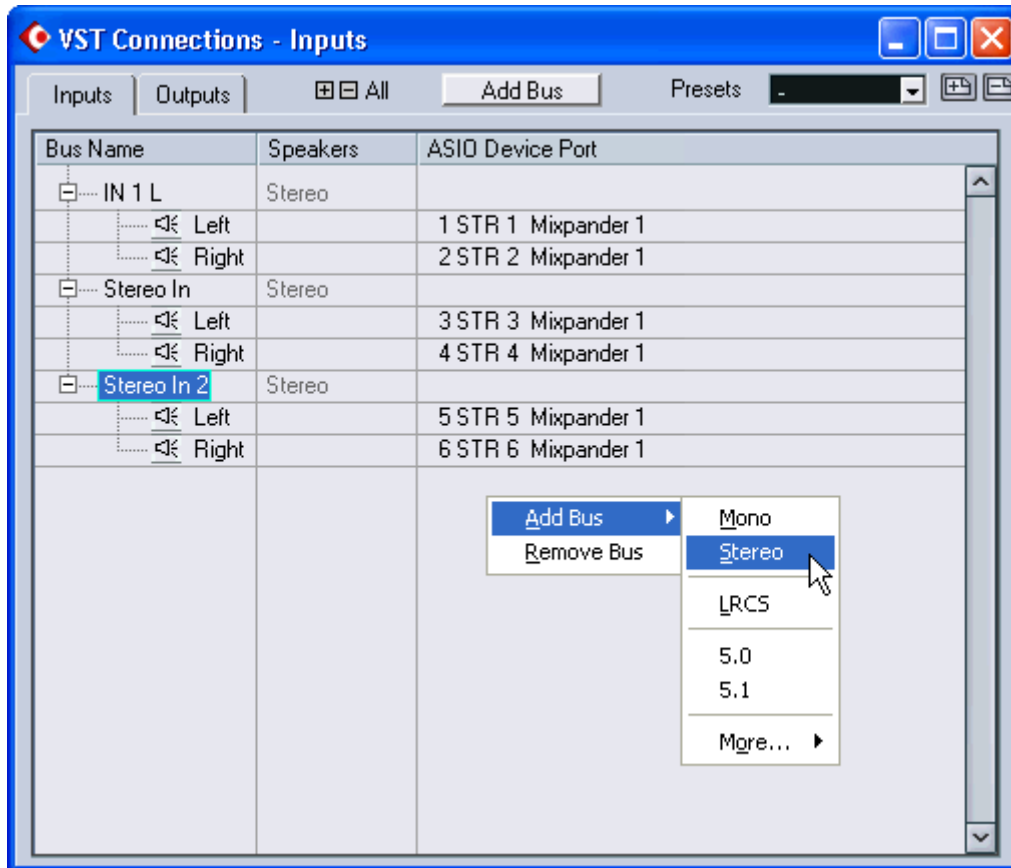
6. In Cubase, open the Mixer by pressing [F3]. Click the VST connections icon, to the left of the Mixer...:



...to open the VST Connections window:



Click the Input tab (if needed) and right-click in the window to create the required number of stereo input buses. Then click the Output tab and right-click in the window to create the required number of stereo output buses. You should see the Soundscape streams appear incrementally in the “ASIO Device Port” column as you create input and output buses:



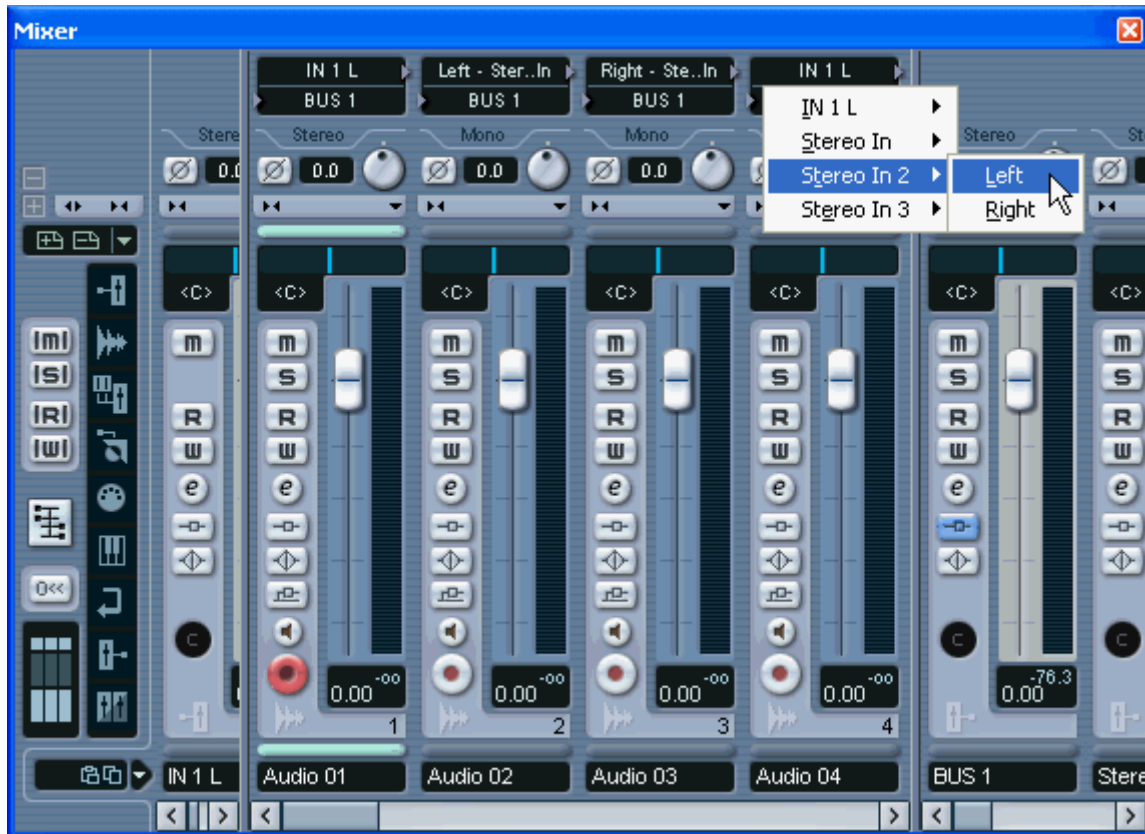
NOTE: If needed, you can change an “ASIO Device Port” by clicking its name in the column to the right and selecting another input or output stream in the menu that will be displayed.

7. Make sure the top part of the Cubase Mixer (Input/Output Settings) is displayed. If it is not, click the corresponding button, located to the left of the Mixer, so that it is displayed:

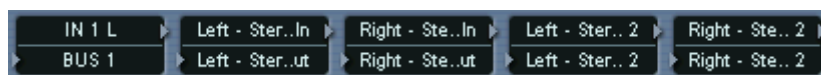


NOTE: The Cubase Mixer is divided vertically in three segments. The audio track channel inputs and outputs are shown in the top segment, which is displayed when the top segment of the button is lit.

Select the input and output buses you have created as inputs and outputs for the Cubase audio track channels using the selection boxes at the top of each channel. For mono track channels you will need to select left or right alternatively:



This is how the input/output selections read on our test system while creating this example:



8. In Cubase, place the Project Cursor at the time position of your choice, arm the audio tracks you want to record to using the track arming buttons in the Mixer or in the Track column to the left of the Project window, press Record and start your sound sources (if the Cubase Mixer is displayed, you will see a signal in the audio input channel meters).

9. Press Stop. You should see the recorded audio parts displaying a waveform.

10. Place the Project Cursor at the beginning of the recording you have made and press Play. The recorded parts will be played back via the output buses you have chosen. A signal will show in the audio track channel meters and output channel meters of the Cubase Mixer.

10. Keep experimenting until you are happy with the settings in Cubase. When you are satisfied with the setup, click “Save as Template” under the File menu to save it.

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Visit SSL at URL: <http://www.solid-state-logic.com>

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